UPPER ATMOSPHERE RESEARCH BIBLIOGRAPHY OF CONTAMINANT RELEASE EXPERIMENTS  
PART 3  
C.H. Low and K.H. Lloyd

SUMMARY

This is the last in an occasional series listing the publications involving the experimental technique of releasing vapour clouds into the upper atmosphere. All aspects of the technique are included, as are all applications to the determination of neutral atmosphere and ionospheric parameters.

March 1977

Approved for Public Release

Technical Memoranda are of a tentative nature, representing the views of the author(s), and do not necessarily carry the authority of this Establishment.

POSTAL ADDRESS: The Director, Weapons Research Establishment, Box 2151, G.P.O., Adelaide, South Australia, 5001.
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1. INTRODUCTION

This is the third part of an occasional series which collects together references to the published literature on vapour releases from sounding rockets into the upper atmosphere.

The references are divided into sections based on the experimental techniques, and the data obtained from them. This Memorandum covers the published literature mainly over the period 1971 to 1976. It will be the last in the series, as the W.R.E. Upper Atmosphere project has been terminated.

For convenience, the section numbering sequence of the previously published parts 1 and 2 are again followed in this document.

3. UPPER ATMOSPHERE MEASUREMENTS (OPEN LITERATURE)

3.1 Atmospheric structure

3.1.1 Diffusion, density

J. Nakamura
H. Kimura


D. Rees


M. Shaft Ahmad
M. Hanif


F. Barlier
J.L. Falin
C. Jaech


A.C. Faire
K.S.W. Champion
E.A. Murphy


S.P. Zimmerman
C.A. Trowbridge

3.1.2 Temperature

V. Degan
N. Brown
G.J. Romick

D. Rees

V.F. Chepura

A.C. Faire
K.S.W. Champion
E.A. Murphy

D. Rees
3.1.3 Turbulence, waves

C.G. Justus
Turbulence Near the 100 km Level of the Upper Atmosphere.

S.P. Zimmerman
R.S. Narcisi
The Winter Anomaly and Related Transport Phenomena.

M. Shaft Ahmad
M. Hanif
Measurement of Winds and Diffusion in the Lower Thermosphere from a Sodium Vapour Release Experiment.

S.P. Zimmerman
C.A. Trowbridge
I.L. Kofsky

C.O. Hines
Gravity Waves in the Atmosphere.

N.W. Rosenberg
S.P. Zimmerman
Ionospheric Winds and Viscous Dissipation.

K.H. Lloyd
C.H. Low
R.A. Vincent
Turbulence, Billows and Gravity Waves in a High Shear Region of the Upper Atmosphere.
N.W. Rosenberg
D. Golomb
S. Zimmerman
W. Vickery
J. Theon

The Aladdin Experiment - Part I Dynamics.
Space Research XIII, Akademie-Verlag,
Berlin, Ed. M. Rycroft and S. Runcorn,

S.P. Zimmerman
G. Pereira
E. Murphy
J. Theon

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Simultaneous Upper Atmosphere Temperature
and Wind Measurements.
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C.A. Trowbridge

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Region 95 to 110 km.
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J.F. Bedinger

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Atmosphere by K.H. Lloyd, C.H. Low
and R.A. Vincent.

K.H. Lloyd
C.H. Low
R.A. Vincent

Reply to Comments by D. Layzer and
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Gravity Waves in a High Shear Region of
the Upper Atmosphere.

A.H. Manson
J.B. Gregory
D.G. Stephenson

The Effect of Atmospheric Gravity Waves
Upon Wind Determinations in the Lower
Thermosphere (80 - 100 km).

S.P. Zimmerman
N.W. Rosenberg
A.C. Faire
D. Golomb

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Space Research XIV, Akademie-Verlag,
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G.V. Groves

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Experiments at Natal, Brazil.

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D.D. Woodbridge

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M. Huruhata
J. Nakamura
K. Akita
K. Saito

Wind Measurement by Sodium Cloud Method.
Proc. VI International Symposium on
J. Nakamura
K. Akita
K. Saito
C.H. Murphy
G.V. Bull
C.H. Murphy
V.P. Nesterov
M. Ackerman
S.H. Hall
D.G. McDonald
G.J. McGrattan
W. Stoffregen  
The Anomaly of the Neutral Wind at a Height of $\approx 200$ km at High Latitudes.  

D.M. Weinstein  
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J. Keeney  

J.D. Whitehead  
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P. Amayenc  
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G. Vasseur  

L.A. Andreeva  
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L.A. Katasyev  

D.B. Uvarov  

L.A. Andreeva  
Wind Profiles from Luminous Cloud Observations and the Theory of Es Formation Based on Wind Shear.  

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Y.K. Chasovitin  

C.G. Justus  
Atmospheric Pressure, Density, Temperature and Wind Variations Between 50 and 200 km.  

A. Woodrum  

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K.H. Lloyd  
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M.P. Neal  

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K. Burrows  

R.S. Fitchew  

H. Rishbeth  
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<td>Thermospheric motions measured by chemical releases.</td>
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<td>S.P. Zimmerman</td>
<td>Wind energy deposition in the upper atmosphere.</td>
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<td>A.H. Manson</td>
<td>La Polarisation Des Marees Et Des Ondes De Gravite.</td>
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H. Muller
S. Kingsley

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W. Stoffregen
A. Pederson
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B. Oberg
G. Maseide
S. Lamnevik
O. Hellmouth

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C.A. Forsberg
D. Golomb
N.W. Rosenberg
W.K. Vickery

R. Good
D. Golomb

C. Philbrick
R. Narcisi
R. Good
H. Hoffman
T. Keneshea
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S. Zimmerman
B. Reinisch

V.N. Balabanova
K.D. Bychkova
V.P. Martynero

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K. Maseide  
J. Troim  

S. Tsutsumi  

H.M. Sullivan  

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C. Lippens  
P. Simon  
E. Van Hemelrijck  
E. Van Ransbeek  
A. Rehri

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I. Bierman  
R. Lust  
Rh. Lust  
H. Schmidt

C.H. Murphy  
G.V. Bull  
J.W. Wright

V.N. Balabanova  
K.D. Bychkova

V.P. Nesterov  
I.K. Chasovitin

W.M. Pickering  
D.W. Windle  
H. Volk  
G. Haerendel

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<td>V.K. Semenov</td>
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<td>V.F. Chepura</td>
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<td>H. Sakurai</td>
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N.J. Zabusky  
J.H. Doles
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K.W. Michel


R. Gendrin

S.R. Goldman

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S. Kato

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B.E. McDonald
S.R. Goldman


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T. Davis

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J.W. Wright

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E.C. MacKenzie  
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M. Roemer  
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E. Van Hemrljick  
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L. Holway  
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D.M. Kerr  
M.S. Tierney  

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C.A. Forsberg  

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The Electronic Transition Moment of the $A'\Sigma - \chi'\Sigma$ Band System of BaO.  

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T. Keneshea

J.S. Draper
F. Bien
R.E. Hunting
D.E. Paulson
A. Farmer
A Busy Winter for Rocketeers.

D. Golomb
Chemiluminescence of Sodium Released at
Night and its Relations to the Sodium
Night Glow.

H. Hoffman
G. Best

M. Mendillo
Sudden Vanishing of the Ionospheric F
Region Due to the Launch of Skylab.

G.S. Hawkins
J.A. Klobuchar

T.M. Fang
The Spatial Distribution of Long Lived
Gas Clouds Emitted by Satellites in the
Outer Solar System.

W.H. Smyth
M.B. McElroy

R.H. Moore
L. Woolliscroft
Outgassing from Sounding Rockets and its
Significance for Aerodynamic Measurements.

J.A. Coburn

H. Debehogne
C. Lippens
E. Van Hemelrijk
E. Van Ransbeek

5. DIATOMIC A10 MOLECULE

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Laser Excited Fluorescence and Radiative
Lifetime of A10 \( (B^2\Sigma^+ - \chi^2\Sigma^+) \)*

G. Capelle
H.P. Broida

H.H. Michels
Ab Initio Calculation of the \( B^2\Sigma^+ - \chi^2\Sigma^+ \)
Oscillator Strengths in A10.

6. W.R.E. PUBLICATIONS ON CONTAMINANT RELEASE EXPERIMENTS

Internal papers also published externally are excluded.

6.1 Experimental results
K.H. Lloyd
Investigations into the Nature of Turbo-
pause.
C.H. Low  
A.D. Hind  

Daytime Winds in the Lower Thermosphere.  

K.H. Lloyd  
C.H. Low  
R.I. MacLeod  

Parameters of the Lower Thermosphere  
from Observations on Rocket Released  
Vapour Clouds.  

K.H. Lloyd  
C.H. Low  
R.I. MacLeod  

Observations on Thermospheric Wind and  
Temperature Profiles at Twilight.  
WRE Tech. Note, to be published.

K.H. Lloyd  
C.H. Low  
A.D. Hind  

Daytime Observations of Lower Thermospheric  
Wind Profiles.  
WRE Tech. Note, to be published.

6.2 Instrumentation

A.D. Hind  
K.H. Lloyd  

A Field-of-view Scanning Photometer to  
Detect Weak Emissions against a Bright Sky  
Foreground.  

6.3 Miscellaneous

C.H. Low  
K.H. Lloyd  

Upper Atmosphere Research Bibliography of  

6.4 Payloads

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I.R. Johnston  

Evaluation of a Pyrotechnic Composition  
Based on Boron and Tungstic Oxide.  

G.M. Hensel  

Lithium Vapouriser for Cockatoo.  

G.M. Hensel  
I.R. Johnston  

Lithium Vaporiser for Cockatoo Mk II and  
Skylark.  

R.H. Weldon  
G.M. Hensel  
I.R. Johnston  

An Improved High Altitude Grenade.  

R.H. Weldon  
G.M. Hensel  
I.R. Johnston  

A Long Burning Time Pyrotechnic Delay  
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# DOCUMENT CONTROL DATA SHEET

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## 3 TITLE

**UPPER ATMOSPHERE RESEARCH BIBLIOGRAPHY OF CONTAMINANT RELEASE EXPERIMENTS - PART 3**

## 4 PERSONAL AUTHOR(S):

C.H. Low and K.H. Lloyd

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This is the last in an occasional series listing the publications involving the experimental technique of releasing vapour clouds into the upper atmosphere. All aspects of the technique are included, as are all applications to the determination of neutral atmosphere and ionospheric parameters.